Before You Read

NAME: _____

How Changes in Salt Water Could Change Our Lives

1. (Circle) the word **TRUE** if the statement is TRUE **or** (Circle) the word **FALSE** if it is FALSE.

   a) Ocean level is rising.

   TRUE **FALSE**

   b) Polar ice caps are shrinking.

   TRUE **FALSE**

   c) Fish populations are increasing.

   TRUE **FALSE**

   d) Polar bears are losing habitat.

   TRUE **FALSE**

   e) If all the ice at the poles melted, sea level would rise about seven feet.

   TRUE **FALSE**

2. **Put a check mark (✓) next to the answer that is most correct.**

   a) Most of Earth's ice is located

   - ○ **A** in glaciers
   - ○ **B** in ice bergs
   - ○ **C** on Antarctica
   - ○ **D** on Greenland

   b) How is an increasing concentration of atmospheric carbon dioxide related to sea level change?

   - ○ **A** Carbon dioxide evaporates from the ocean, which decreases ocean volum
   - ○ **B** Carbon dioxide increases the greenhouse effect, raising temperatures and melting ice.
   - ○ **C** Carbon dioxide increases the rate of photosynthesis, which makes climate raini
   - ○ **D** Carbon dioxide forces water vapor out of the atmosphere and into the ocea

   c) What does "sustainable" mean as the term applies to the fishing industry?

   - ○ **A** catching enough fish to feed everyone
   - ○ **B** being sure fish have enough food to eat
   - ○ **C** keeping as many fish as you throw back
   - ○ **D** catching fish at the same rate they reproduce

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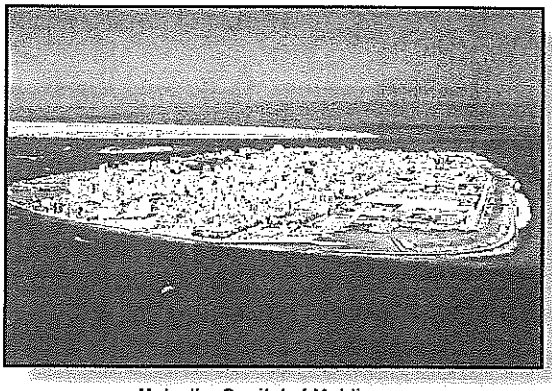
Reading Passage

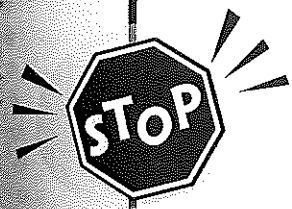
How Changes in Salt Water Could Change Our Lives

The two changes in the oceans that could affect people's lives most are melting ice caps and ocean pollution. Melting polar ice could have the greatest effect on the lives of people living in two very different places—in the arctic and on tropical **atolls**. Loss of sea ice is such a serious problem for polar bears that it has caused a decline in their population. If this predator at the top of the **Arctic** food chain is removed, it will change the relationships among all organisms in the ecosystem. In the arctic, people are very much a part of the ecosystem.



Male, the Capitol of Maldives.
(The whole city is only a few feet above sea level.)

People living on low-lying atolls face a different problem. These islands are so close to sea level that a slight rise in ocean level could flood much of their land. The picture shows the capital city of an island nation in the Indian Ocean called the Maldives. The average elevation of the Maldives is only 2.3 meters (7.5 feet). If all the ice on Greenland melted, these islands would be under water. The ecosystems of tropical and temperate coastal areas would probably not suffer as greatly from rising sea levels as would the arctic ecosystems from loss of ice. Most organisms could adapt to slowly rising ocean levels.



How could rising global temperature lead to a problem for people living on tropical atolls?

_____

_____

The decline in fish populations could affect everyone who depends on seafood as part of their diet. Two things could help save fish populations. We could stop polluting the oceans, and we could reduce the fish catch to a **sustainable** level. This means catching fish at the same rate they are replaced by their own reproduction. To harvest fish sustainably would mean that people would not be able to eat as much fish as they want to. But that is better than soon having no fish at all.

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1. Look at the map of the United States.

In which city could rising global temperature cause the *most* people to move?

_____ **A** Las Vegas

_____ **B** Denver

_____ **C** Chicago

_____ **D** Miami

2. Circle the word **TRUE** if the statement is TRUE **or** Circle the word **FALSE** if it is FALSE.

a) Polar bear population has increased because of warmer temperatures.
TRUE **FALSE**

b) If all the ice in Greenland melted, some countries would be completely under water.
TRUE **FALSE**

c) Floating trash is spread evenly over the surface of the ocean.
TRUE **FALSE**

d) Some types of ocean fish contain toxic chemicals.
TRUE **FALSE**

e) Atolls are small floating islands.
TRUE **FALSE**

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3. Answer the questions in complete sentences.

Describe *two* changes in the oceans that could change people's lives. For each ocean change, tell how people's lives would change.

a. _____

_____

b. _____

_____

Extensions & Applications

An Arctic food chain is shown in the diagram.

a. How would the ringed seal population change if the polar bear population declined? Explain your answer.

_____

_____

_____

b. How would the Arctic cod population change if the polar bear population declined? Explain your answer.

_____

_____

_____

A Marine Food Chain